

# Tropical Cyclones and Conditions of Readiness



# DEFINITIONS

**Tropical Cyclone:** Tropical cyclones or tropical disturbances are discrete tropical weather systems of apparently organized convection.

- generally 100-300 nautical miles in diameter
- originate in the tropics or subtropics
- have a non-frontal migratory character
- maintain their identity for 24 hours or more
- characterized by a rapid decrease in pressure and increase in winds toward the center of the storm

**Tropical Depression(TD):** A tropical depression is a tropical cyclone in which the maximum sustained surface wind speed is 33 knots (38 mph) or less. (Using the U.S. 1 minute average for speed)

# DEFINITIONS



**Tropical Storm (TS):** A tropical storm is a tropical cyclone in which the maximum sustained surface wind speed ranges from 34-63 knots (39-73 mph). (Using the U.S. 1 minute average for speed) The storm is named during this stage.



**Hurricane:** A hurricane or typhoon is a warm-core tropical cyclone in which the maximum sustained surface wind speed is 64 knots (74 mph) or more. (Using the U.S. 1 minute average for speed)

- hurricane refers to Northern Hemisphere cyclones east of the International Dateline to the Greenwich Meridian.
- typhoon refers to Pacific cyclones north of the



Greenwich Meridian

International Date Line

Hurricane

Typhoon

Cyclone

Baguio

Willy-willy

# DEFINITIONS

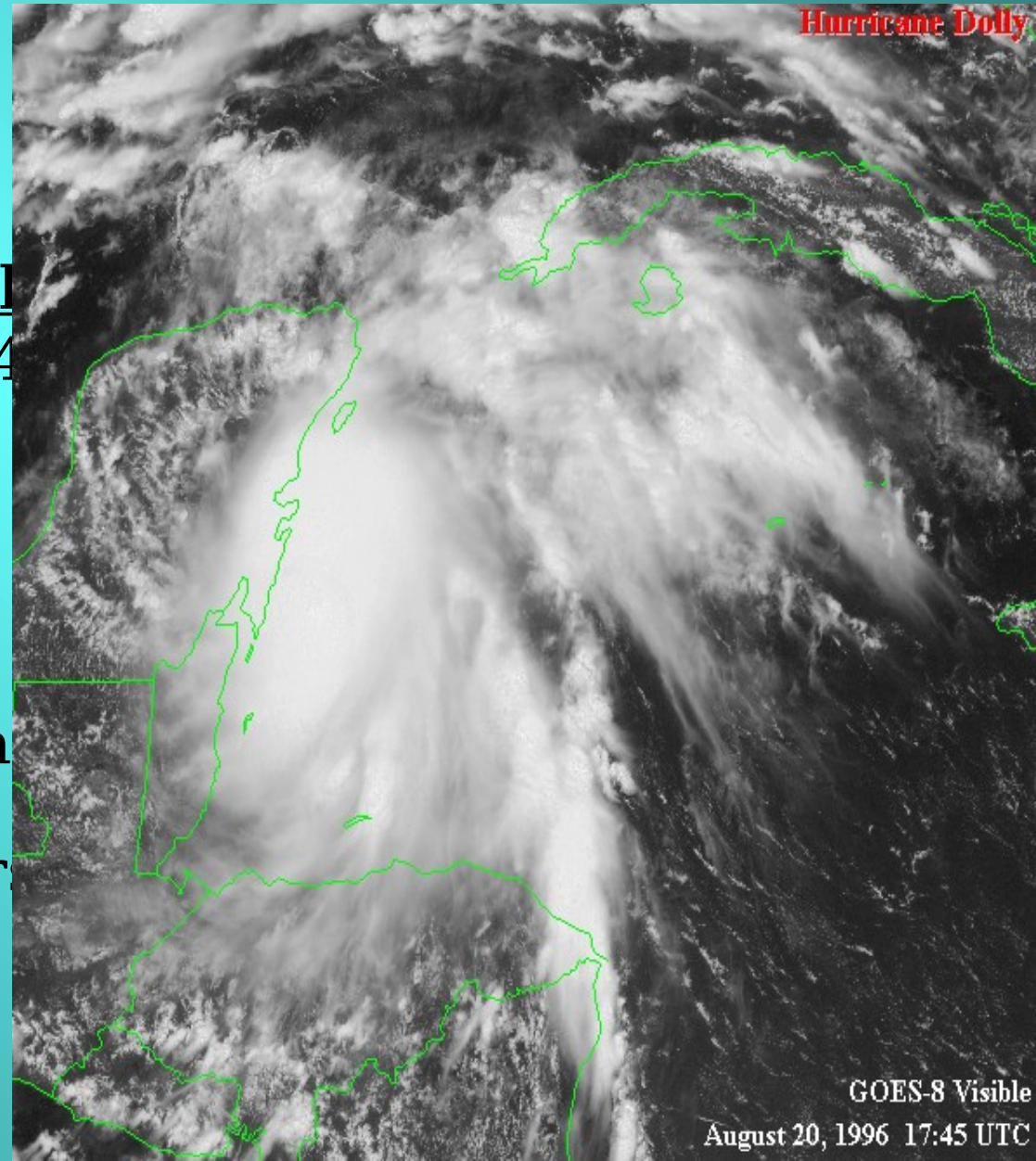
**Saffir-Simpson Scale:** Hurricane intensity is categorized in several ways. One of the better known is the Saffir-Simpson Hurricane Scale.

- 1-5 rating based on the hurricane's present intensity
- used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall
- wind speed is the determining factor in the scale
- storm surge values are highly dependent on the slope of the continental shelf in the landfall region

# HURRICANE CATEGORIES

## Category 1 (Minimal)

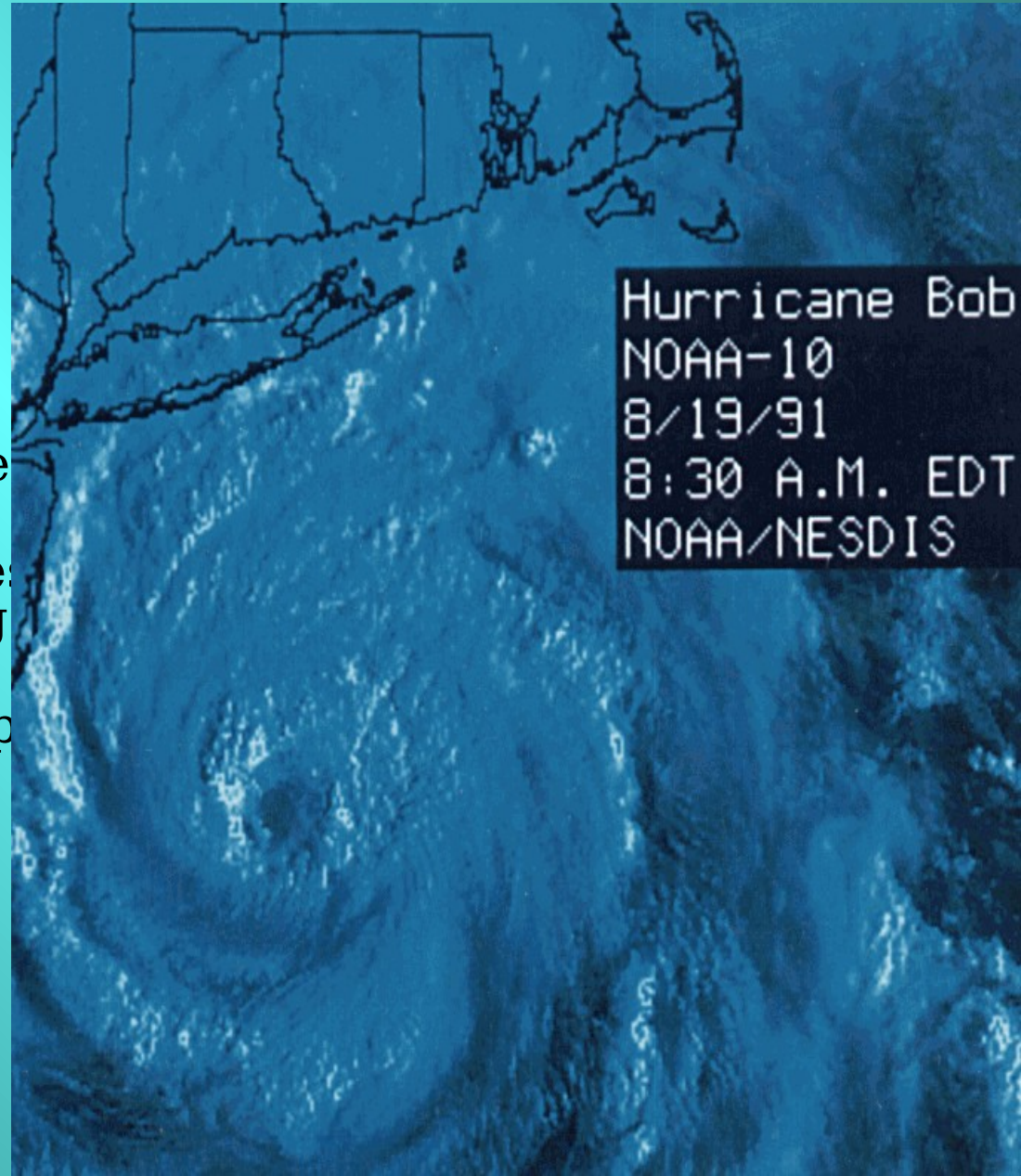
- winds 64-82 knots (74-95 mph)
  - storm surge 4 to 5 ft above normal
  - no real damage to building structures
  - low lying coastal area flooded
  - minor damage to pier
- (DOLLY 1996)



# HURRICANE CATEGORIES

## **Category 2 Moderate)**

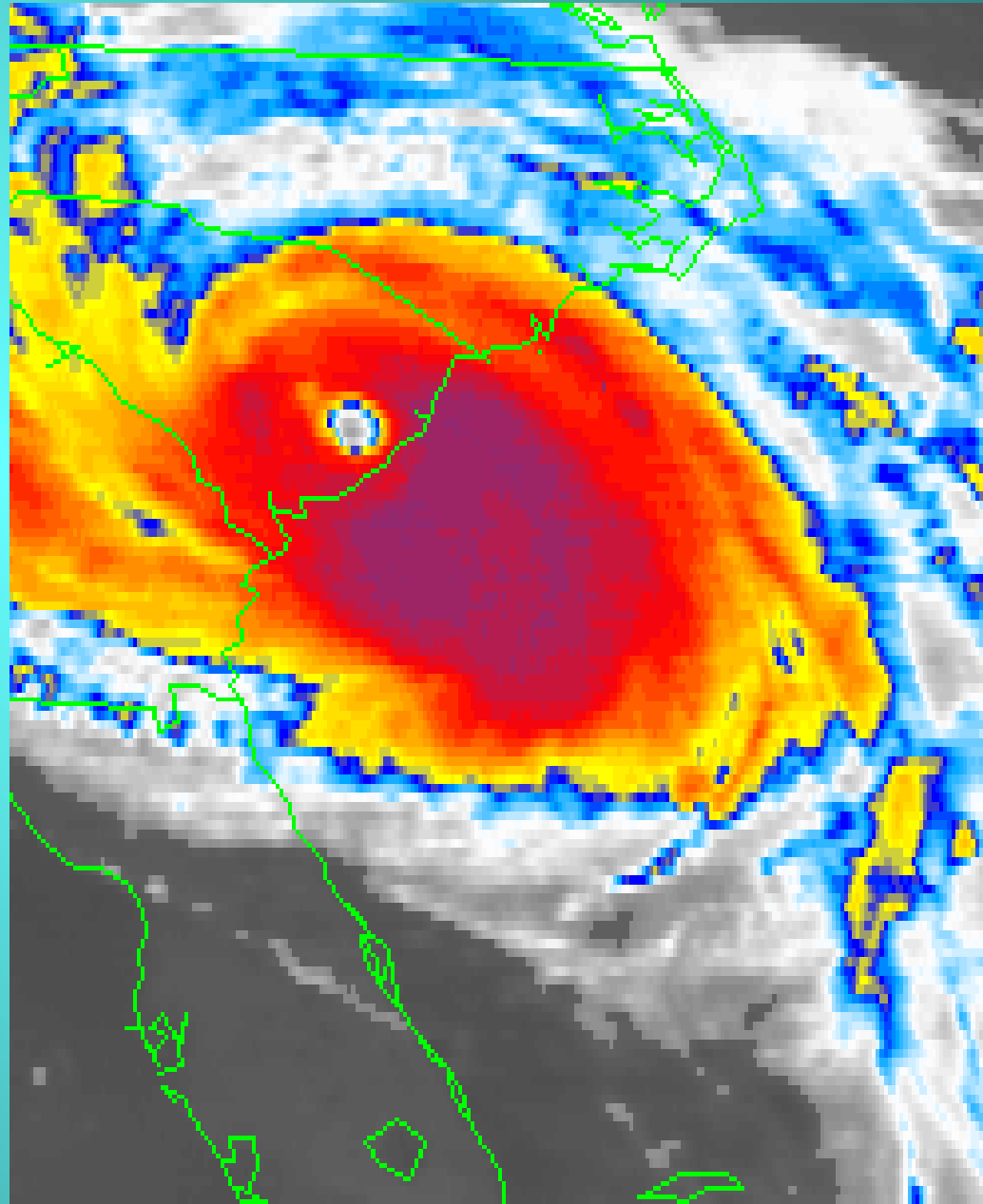
- winds 83-95 knots (96-110 mph)
  - storm surge 6 to 8 ft above normal
  - minor damage to structure, poorly constructed building major damage
  - coastal and low lying escape routes flooded over
  - considerable pier damage.
- (BOB 1991)



# HURRICANE CATEGORIES

## **Category 3 (Extensive)**

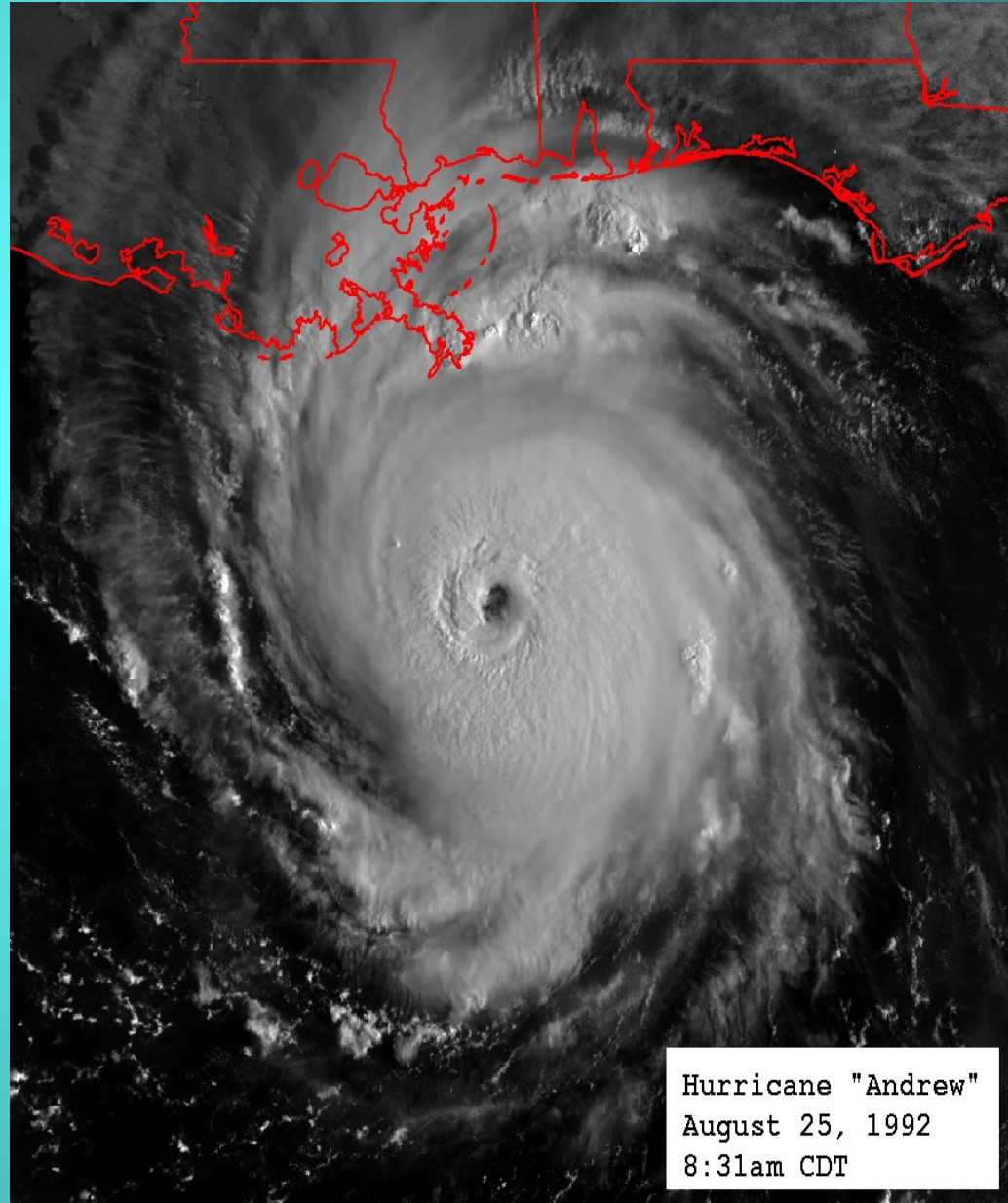
- winds 96-113 knots (111-130 mph)
  - storm surge 9 to 12 ft above normal
  - major damage to structures, poorly constructed buildings destroyed
  - serious flooding along the coast, and extensive flooding may extend inland 8 miles.
- (HUGO 1992)



# HURRICANE CATEGORIES

## **Category 4 (Extreme)**

- winds 114-135 knots (131-155 mph)
  - storm surge 13 to 18 ft above normal
  - extensive roofing and window damage, complete destruction of mobile homes,
  - areas above 10 ft flooded inland up to 6 miles, major erosion of beaches, and massive evacuation of coastal areas
- (ANDREW 1992)

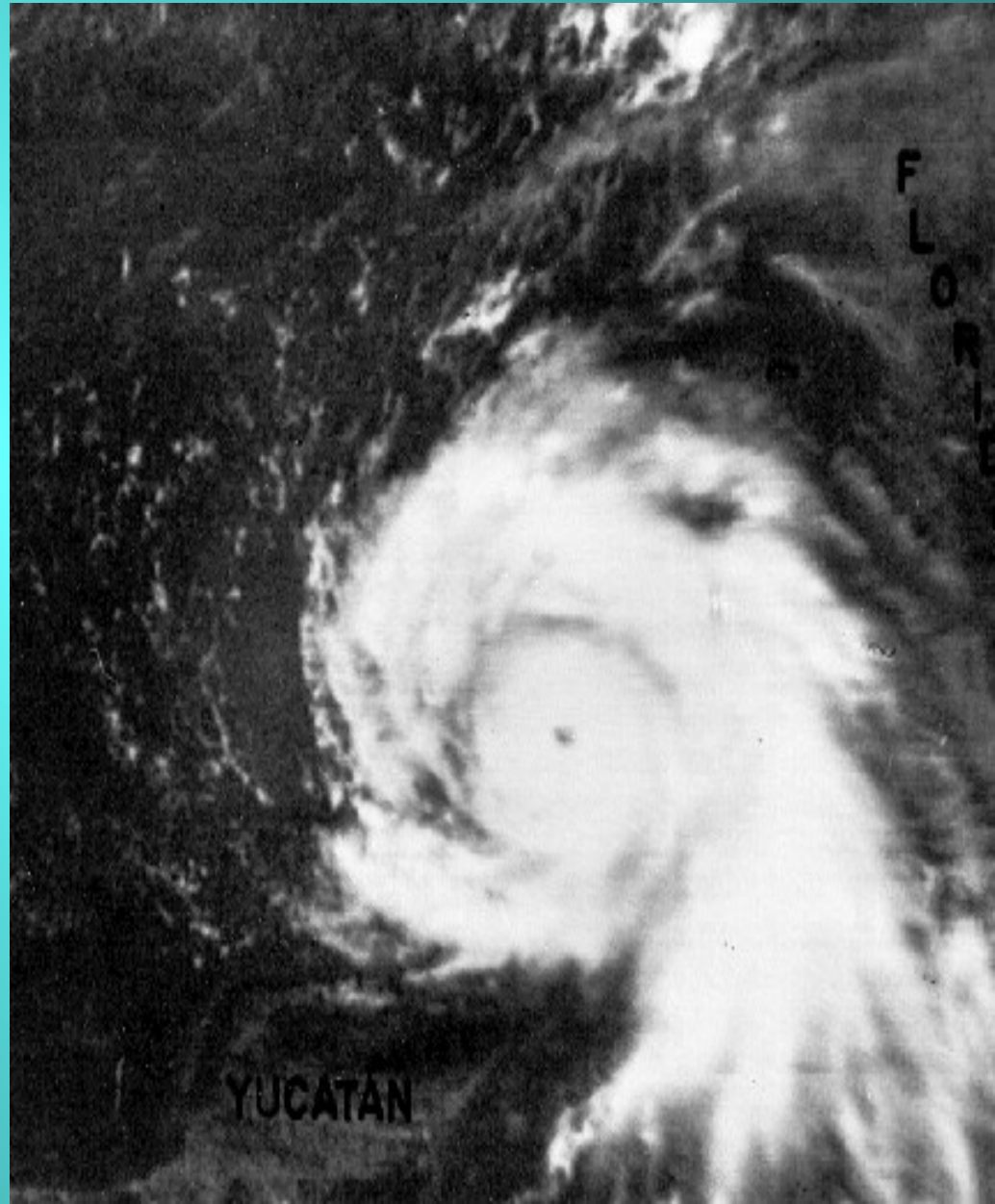


Hurricane "Andrew"  
August 25, 1992  
8:31am CDT

# HURRICANE CATEGORIES

## **Category 5 (Catastrophic)**

- winds above 135 knots (156 mph)
- storm surge greater than 18 ft above normal
- complete failure of roof structures and very severe window and door damage, some complete buildings fail, major damage to structures lower than 15 ft above sea level
- massive evacuations of residential units within 10 miles of the coast. (CAMILLE 1969)



# TROPICAL CYCLONE CONDITIONS OF READINESS

**CONDITION V** - Destructive force winds (35 kts or as specified \*) are possible within 96 hours. Also set when secured from destructive weather conditions and when it is hurricane season.

- Atlantic Ocean, 1 June – 30 November
- Eastern Pacific, 15 May – 30 November
- Western Pacific, year round

**CONDITION IV** - Destructive force winds are possible within 72 hours.

**CONDITION IVA** - Destructive force winds are possible within 72 hours. (Cuba and Puerto Rico maintain this condition throughout the season)

**\* DESTRUCTIVE FORCE WINDS ARE DELINEATED BY LOCAL 3140 INSTRUCTION**

# CONDITIONS OF READINESS

**CONDITION III** - Destructive force winds are possible within 48 hours.

**CONDITION II** - Destructive force winds are anticipated within 24 hours.

**CONDITION I** - Destructive force winds are anticipated within 12 hours.

**CONDITION IA** - Destructive force winds are imminent. This condition is also used to sortie aircraft.



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